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ABSTRACT

Twenty-seven activities have been compiled to assist teachers in incorporating environmental methods and techniques into their preschool curricula. These activities are designed to complement the classroom curriculum and heighten participant awareness and appreciation of environmental resources and relationships. Each activity includes: (1) activity number; (2) time required to complete the activity; (3) subject area (mathematics, science, language arts, art, music); (4) title; (5) objectives; (6) list of materials needed; (7) reference(s); and (8) procedures. Among the topic areas investigated are: protective coloration; camouflage; color identification; rocks; colors, shapes, and textures in the natural environment; predator-prey relationship; bird feeders; and fossils. In addition, the activities foster the development of observation, classification, mathematics, listening, communication, measuring, and language skills. (JN)

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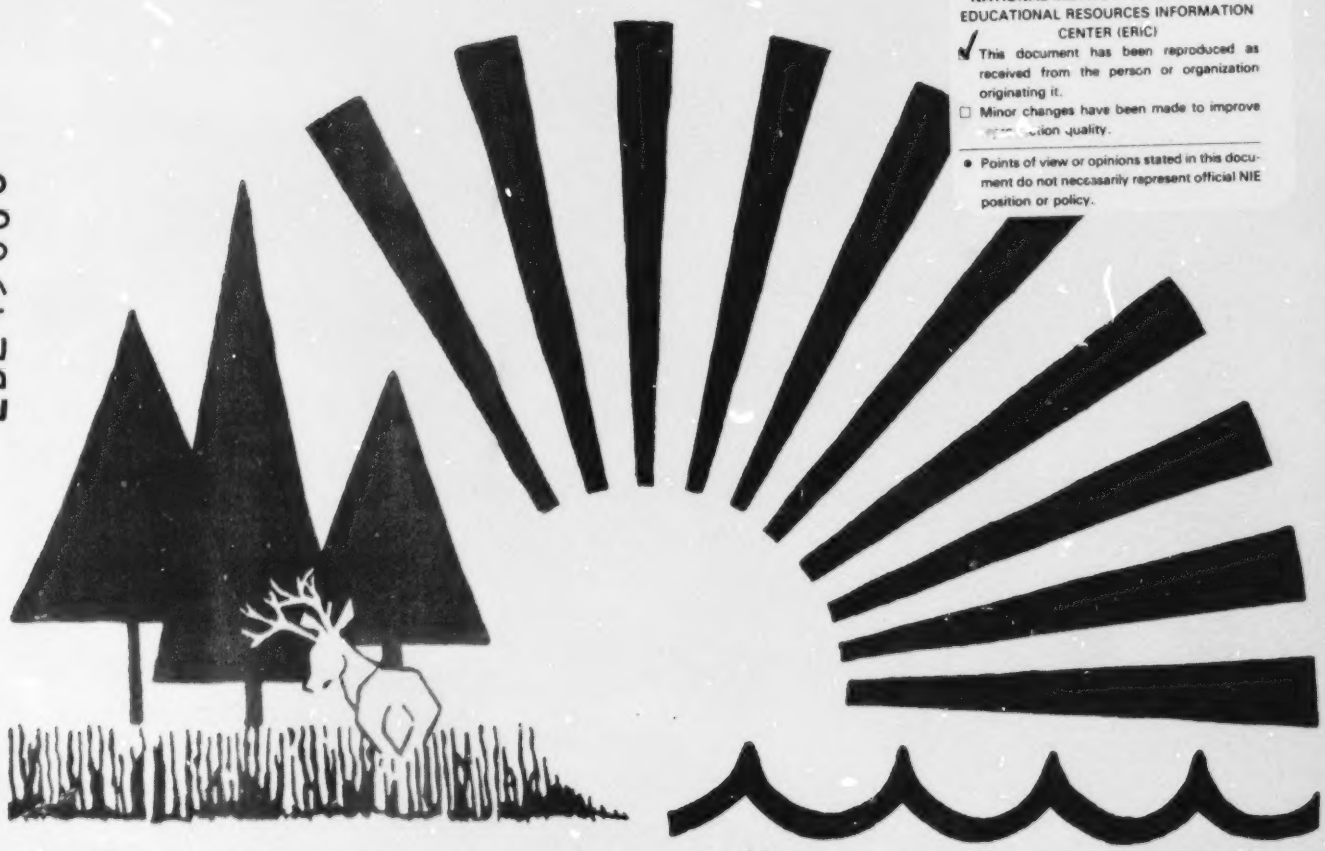

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ENVIRONMENTAL EDUCATION CURRICULUM GUIDE

SE044411

The activities in this booklet have been compiled to assist teachers in incorporating environmental methods and techniques into their curriculum. These activities are designed to complement the classroom curriculum and heighten participant awareness and appreciation of environmental resources and relationships.

For more information on environmental opportunities in TVA and Land Between The Lakes contact:

Interpretation and Education Section
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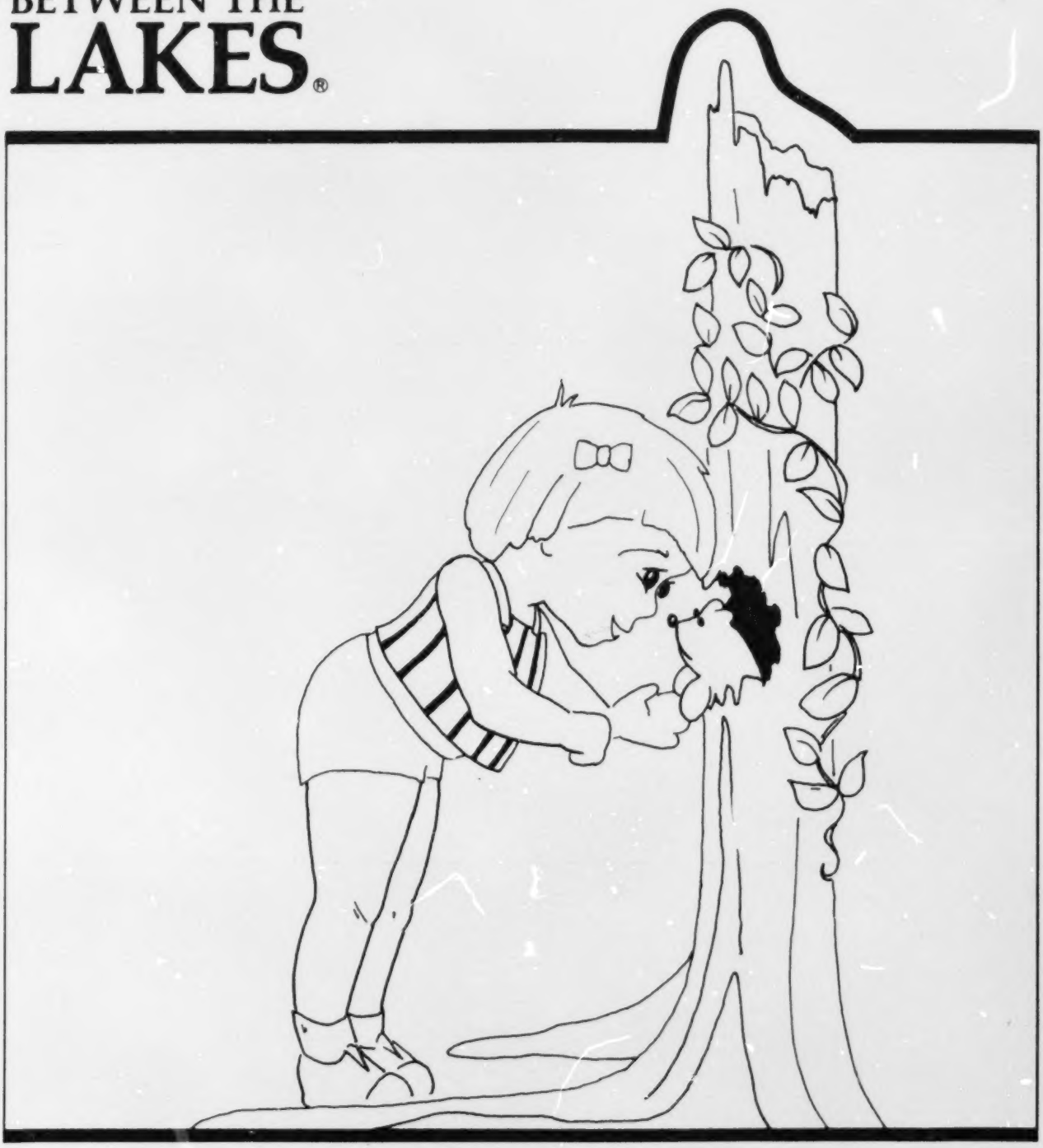

Creative Environmental Education Activities for Young Children

4

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P1

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Math, Science

TITLE

Nature's Kaleidoscope

OBJECTIVES

- To introduce concept of protective coloration in nature
- To reinforce math skills of counting and sorting
- To reinforce color identification

MATERIALS NEEDED

100-200 colored toothpicks (evenly divided with red, green, yellow, brown, blue, and natural); pictures of protective coloration (camouflage) in animals (i.e., deer, snakes, birds).

REFERENCES

Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P1

Select an outside area with a variety of ground cover (i.e., forest floor covered with leaves, grassy area or bare soil). Prior to activity, scatter toothpicks on the ground. Bring children to the area and tell them that there are toothpicks hidden on the ground. Define boundaries. At a signal, children should collect as many toothpicks as they can find and divide them according to color.

Discuss: Which colors were easy to find? Which were hard to find? Generally, toothpicks with a color similar to the ground cover will be found last. Relate this to protective coloration of animals and how this helps to camouflage them from predators (enemies). How does man use protective coloration?

Show children pictures of examples of protective coloration in animals.

Discuss how bright colors often help to distract a predator (such as a predator which is led away from a bird's nest by the flight of a brightly colored male bird) or attract a species for pollination (such as bees to bright flowers). Show examples of these.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P2

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Math, Science

TITLE

Camouflage Hunt

OBJECTIVES

- To illustrate the importance of camouflage in the natural environment
- To reinforce color identification
- To reinforce such math skills as counting and sorting

MATERIALS NEEDED

Pipe cleaners in a variety of colors

REFERENCES

Project Learning Tree, The American Forest Institute, Washington, D.C.

ACTIVITY NUMBER: P2

Prior to activity, distribute pipe cleaners in the natural environment (i.e., on the ground, low-hanging tree branches, tree bark, etc.).

Have children pretend that they are birds that must survive for a day in their world. That day will last only five minutes. Discuss requirements for survival: Food will be a major concern. Children will state that many birds need worms to survive. At this point, show children pipe cleaners which will be their imaginary worms. Their task will be to find as many worms (pipe cleaners) as possible. Define boundaries. As children swoop down to collect their worms, they should make the sound of the bird they are pretending to be.

Bring students together to discuss results. Sort pipe cleaners by color. Which colors were easiest/hardest to find? Why? Discuss camouflage and protective coloration. Have children identify animals/insects that utilize camouflage. How do humans use camouflage?

Repeat this activity in a different environment to see if results differ.

Try the activity again. After children have collected the pipe cleaners, tell them that red pipe cleaners represent a disease that will kill birds. How many birds did this affect?

Followup: Show children examples of camouflage in nature that are illustrated in magazines or books.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P3

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts, Art

TITLE

Color Chains

OBJECTIVES

- To reinforce color identification

MATERIALS NEEDED

None

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education

ACTIVITY NUMBER: P3

This is an excellent activity to do during the fall. On a walk around the schoolyard, have the children collect as many different colors of leaves as possible. Have the children sort the leaves by colors. Then arrange the leaves in order by color to form color chains, each shade of color blending into the next. Start with short color chains consisting of one color, the lightest shade at one end, the darkest at the other end, and the rest between them. Then make other color chains to add to them.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P4

TIME REQUIRED	LEVEL	SUBJECT
1 hour	Preschool	Art

TITLE

Color Wheels/Sandpaper Painting

OBJECTIVES

- To increase awareness of colors in nature
- To observe seasonal color changes in nature
- To foster creativity through an art project

MATERIALS NEEDED

Color wheels, natural materials (i.e., grass, leaves, rocks, flowers), a sheet of fine sandpaper for each student.

REFERENCES

Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P4

Color Wheel - Make large color wheels explaining to the children the basic principles of color: Primary colors are red, yellow, blue. Secondary colors are produced by mixing two adjacent primary colors. (Laminated color wheels can be used for many years.)

Have the children take their color wheels as they walk around the school grounds. They should be looking for natural materials to use in making natural color wheels. Collect a variety of objects for each color and place them around their manmade color wheels. Share the results with the entire class.

Sandpaper Painting - Now give each child a piece of fine sandpaper and instruct the class to paint a picture with their natural paints! Demonstrate how flowers, leaves, and grass can be used as color pigments by rubbing across the sandpaper. Rocks and charcoal can be used to make simple line pictures. Natural materials can be used to color the picture.

Discuss: Nature colors are functional: Bright flowers attract bees and insects required for pollination, green indicates food-making chlorophyll, rock colors indicate mineral content.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P5

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Math, Art

TITLE
Shape Hunt

OBJECTIVES
- To discover geometric shapes that exist in the natural environment
- To reinforce identification of basic forms (i.e., circle, square, triangle)
- To reinforce visual perception skills

MATERIALS NEEDED
Poster board, glue, magic markers

REFERENCES
Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P5

Prepare shape cards prior to activity. Cut a circle, square, and triangle out of poster board. These will be used as examples of the basic shapes.

Take the class outside. Show the students the shape cards. Have the group hunt for natural objects that resemble the basic shapes. It is easier for students to search for one shape at a time. Possible results would be leaves that represent triangles; rocks and twigs that represent squares; and flowers, rocks, and twigs that represent circles.

When all the shapes/objects have been found, have students sort shapes into groups.

Make shape collages by glueing objects on poster board in the classroom. These collages can be used to reinforce the basic shapes.

Discussion: Which shapes were more common? Did any objects have more than one shape. Did anyone find a straight line in nature?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P6

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE
Rocks

OBJECTIVES
- To increase sense of awareness and sensitivity to environment
- To improve vocabulary skills

MATERIALS NEEDED
One rock per child, one blindfold per child

REFERENCES
Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education

ACTIVITY NUMBER: P6

On a walk around the schoolyard, have each child collect one rock that is unusual to him. Have children sit in a circle, holding their rocks. Children should explore their rocks. Rub it in their hands to determine shape and texture. After a few minutes, children should put their rocks on a pile in the middle of the circle.

After returning to the circle, each child should be blindfolded. Pass a rock out to each child. They should pass rocks around the circle in the same direction until they find their own rock. When most children have identified their rocks, have everyone take off the blindfolds.

Discuss how each child identified his rock. How did they feel being blindfolded?

Discuss how everything is a little bit different and that finding the difference in people is what makes each of us unique and special.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P7

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts, Math

TITLE

Dozens of Touches

OBJECTIVES

- To increase child's awareness of the environment
- To develop the power of observation and classifying skills
- To reinforce sense of touch and counting skills

MATERIALS NEEDED

Egg cartons, variety of textured items, glue, tape

REFERENCES

Murray State University Workshop, Field Experience in Environmental Education, 1983

ACTIVITY NUMBER: P7

Before the activity begins, prepare the egg cartons. On the inside lid of each carton, tape or glue an item with a particular texture (i.e., cotton, sandpaper, steel wool, sponge).

Introduce cartons to the class. Take students outside to hunt for twelve small items that are similar to the object in each carton. Sort items and place in correct cartons.

Discussion: Are some textures easy/hard to find? Why? Have students describe each texture. Count items.

A followup activity could introduce opposites. Tape two objects with opposite textures on the egg carton lid. Have students find six examples of one texture and six examples of the opposite texture. Describe textures.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P8

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE
Texture Bag

OBJECTIVES

- To develop the power of observation and classifying skills
- To reinforce sense of touch

MATERIALS NEEDED

Brown paper bag

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P8

On a walk outside, have children collect pairs of natural objects (i.e., feather, rock, leaf, twig, pine cone, moss, nut).

Put five pairs of objects in each paper bag. Have children take turns reaching in the bag. After selecting one object, they must select an identical object from the bag. Each child should describe the object he has selected.

Discuss textures and techniques for distinguishing different characteristics.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: 29

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts, Math

TITLE

Baggage Tags

OBJECTIVES

- To provide individualized learning activities
- To review colors, shapes, textures
- To review alphabet and phonic skills

MATERIALS NEEDED

Variety of baggage tag cards

REFERENCES

Ms. Lib Roller, Metro-Nashville Schools, Environmental Education Program, Nashville, Tennessee

ACTIVITY NUMBER: P9

Prior to activity, make a variety of baggage tag cards and laminate. Examples of cards might include sets on colors, shapes, textures. Other sets could include alphabet letters, pictures to reinforce beginning sounds, and tree bark rubbings.

To begin color baggage tag activity, give each child a baggage tag with a small square of color on it. Each child should find something in nature that matches that color and place his/her tag next to it. Call group together and have each child show group his/her tag and discuss results.

Each set of baggage tags can be done in this manner.

For the beginning sounds tags, each student is given a tag with a letter on it and must find something that starts with that letter. To make this activity more difficult, each child can be given a tag with a picture on it. He/she is to find an object that starts with the same letter as the picture on the tag.

For matching tags, put tags with the beginning letter on objects in the schoolyard. Each child is given a tag with a matching letter. In a group, or individually, the students should find a matching letter and tie the tag beside it. To make this more difficult, one tag can be a capital letter and one can be a small letter.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P10

TIME REQUIRED	LEVEL	SUBJECT
15 minutes	Preschool	Language Arts

TITLE

Noah's Ark

OBJECTIVES

- To improve listening and classifying skills

MATERIALS NEEDED

None

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P10

Divide the children into two equal groups. Whisper the name of a different animal to each child in one group. Whisper the identical animal name to each child in the second group.

At a signal each child will mimic the sound made by his animal (i.e., the cow moos, the dog barks, etc.). The children should search and find the other person making the identical sound.

Variation: As an additional challenge, blindfold each child.

Discuss reasons for animal communication.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P11

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE
Who Said That?

OBJECTIVES
- To increase listening skills

MATERIALS NEEDED
Blindfold

REFERENCES
Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P11

Take the children outside and have them sit in a circle. Instruct them to close their eyes and listen very carefully. No one should make a sound. Listen to all the sounds (both natural and manmade). Discuss the sounds they hear.

Have the children stand and form a circle with one blindfolded child in the center. On a signal from the teacher, one of the children in the circle mimics a sound heard outdoors. The blindfolded child points to the child making the noise. If correct, the child making the noise moves to the center. If unsuccessful, another child in the circle makes a different sound.

Discuss results.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P12

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE

Where Are You?

OBJECTIVES

- To improve listening skills
- To realize the interrelationships between hearing and memory

MATERIALS NEEDED

Tape or cassette player, prerecordings of listening experiences

REFERENCES

Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P12

Prior to activity, tape the following or similar listening experiences of 15-60 seconds duration separated by spacing periods of 5-10 seconds of silence: alarm ringing, church music, school bell ringing, birds chirping, farm sounds, fire engine siren, crowd noises, walking through dry leaves, children in swimming pool, Christmas carols, baby crying.

Have the children sit in a circle. Play the prerecordings for them. During each segment, have them think where they would have to be in order to hear that noise.

Discuss origins of sounds and location of events. Use this activity as an introduction to creative storytelling.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P13

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Science

TITLE
Predator-Prey Game

OBJECTIVES

- To improve listening skills
- To introduce concept of predator/prey relationship
- To teach students that predators use more than sight when hunting for food (prey)

MATERIALS NEEDED

One blindfold

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P13

Students form circle and join hands. Ask for two volunteers--one child will be the predator (i.e., hawk) and one will be the prey (i.e., mouse). Blindfold the predator and place both children in center of circle. At a signal the predator tries to find the prey. Caution the rest of the group to be very quiet and to help keep the predator and prey in the circles. The game continues until the predator touches the prey. Play the game again getting new people.

Variations: Have the prey make a constant noise.
Have the prey make an occasional sound.
Blindfold both the predator and prey.

Discuss how variations changed the game. What senses did the predator use to watch his prey?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P14

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Science

TITLE
Silent Stalking

OBJECTIVES

- To improve listening skills
- To simulate predator-prey relationships in the environment
- To learn the importance of keen hearing and silent stalking skills

MATERIALS NEEDED

Index cards labeled "water"--one per child, rope, one blindfold

REFERENCES

Outdoor Biology Instructional Strategies (O.B.I.S.), Delta Education, Box M, Nashua, New Hampshire 03601

ACTIVITY NUMBER: P14

In this game the children will assume the roles of predator (fox) and prey (rabbits). The rabbits must get to the waterhole without getting caught by the fox.

With a rope, construct a circle on the ground. This will be the waterhole. Place water cards within the circle. Blindfold a child (the fox) and have him stand in the waterhole. The other children (the rabbits) should hold hands and form a large circle around the waterhole. This circle will be the forest. The space between the forest and waterhole will be the open field. The rabbits must hop across the field and get a drink (pick up a card) without being caught by the fox.

To start the game, the rabbits walk around the edge of the forest while the fox spins around. When the fox yells "Stop," everyone freezes.

Now the rabbits hop silently across the field. The fox listens for the approaching rabbits and tries to capture his prey by pointing at the suspected rabbits and yelling "Stop."

If he points directly at a rabbit, the rabbit must leave the game. The rabbits must pause after each hop to see if the fox catches them.

The game ends when all the rabbits have either been captured or have returned to the forest with a "drink."

Play several rounds so that children can take turns being the fox. Discuss results.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P15

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Math, Language Arts

TITLE
Lineups

OBJECTIVES
- To develop the power of observation and classifying skills
- To improve vocabulary skills

MATERIALS NEEDED
None

REFERENCES
Murray State University, Environmental Education Workshop

ACTIVITY NUMBER: P15

Although meters and miles are meaningless words to young children, they are beginning to understand measurement. Capitalize on their interest in comparisons by measuring familiar things with them. Even children who can't count are capable of comparative measurement.

On a walk outside have each child collect three interesting objects. After examining their items, have children lineup their objects according to a particular continuum or order (i.e., shortest to longest, softest to hardest). After each lineup share the results with the class. Continue to challenge the children with more difficult lineups (i.e., newest to oldest). Did children begin to realize that long, short, and other comparative terms are not fixed labels but vary with the situation?

Follow up with a variety of personal lineups. Have the children line themselves up according to hair color. To challenge them, ask the class to line up silently. Can they give suggestions for other lineups?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P16

TIME REQUIRED	LEVEL	SUBJECT
15 minutes	Preschool	Language Arts

TITLE

Angles and Images

OBJECTIVES

- To increase observational skills
- To review descriptive words

MATERIALS NEEDED

None

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P16

On a walk around the schoolyard, call the children's attention to a natural object (i.e., bush, tree). Arrange the students around the object so that each child is looking at the object from a different angle. One child could be lying on the ground looking up, one could be two inches away, one could be far away, one could be stooping over looking through his legs, etc.

Have the children take turns describing the object. Each child should use a descriptive word that has not been used by any other child.

Discuss observations the children should consider: texture, smell, color, sound, feelings the object evokes.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P17

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Science

TITLE
100-Inch Hike

OBJECTIVES

- To increase the child's awareness of the natural environment
- To develop the power of observation
- To investigate the living and nonliving parts of a habitat

MATERIALS NEEDED

One 100-inch piece of string per student, four flag markers (made from toothpicks and colored tape) per student, magnifying lenses (optional)

REFERENCES

Language Arts With An Environmental Twang, Murray State University, Center for Environmental Education, Murray, Kentucky

ACTIVITY NUMBER: P17

Take the students outdoors. Give each child a piece of string and four flags. Have the children imagine themselves to be ants and pretend to shrink down to that size. Ask the children to use the string to make a trail and mark the interesting features with the flags. Children can explore the trails with magnifying lenses.

Discuss items that students have discovered. Did they begin to see more of the environment while they made their trails?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P18

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE
Unnatural/Natural Hike

OBJECTIVES
- To encourage children's awareness of the environment
- To increase children's power of observation
- To reinforce the concept of camouflage among animals

MATERIALS NEEDED
10 objects not found in the natural environment

REFERENCES
Land Between The Lakes Environmental Education Resource Files

ACTIVITY NUMBER: P18

Prior to the activity, place the 10 unnatural objects along a predetermined course outside. All of the objects should be within sight of the route the children will be walking. Try to make some objects more obvious than others. Use shape, color, and texture of the object to help hide the other objects along the course. Do not limit yourself to hiding the objects on the ground. Hide some of them in trees and bushes.

Bring the children outside and instruct them to walk very slowly as they look for unnatural objects along the way. Lead them along the course. When a child spots an unnatural object, he should stop and raise his hand quietly. When others spot the object, they should also raise their hands quietly. When most of the children have discovered the object, have one of them retrieve it.

If all of the objects were not seen the first time, have the children retrace their steps looking for the remaining objects.

Discuss which objects were the hardest to find. Why?

How does camouflage help animals survive?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER! 19

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Language Arts

TITLE
Blindfold Walk

OBJECTIVES

- To encourage sensory perception
- To sharpen individual senses
- To appreciate the acute senses of the blind

MATERIALS NEEDED

Rope, blindfold for each child

REFERENCES

Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P19

Prior to activity, prepare a short trail marked by a rope. The rope should be clear of obstructions and should be varied in direction. "Points of interest" can be marked by a knot in the rope. Examples: Feel textures of a tree, moss, soil, rotting wood, puddle. Keep the trail short enough so that the children won't become frustrated.

Blindfold children and have them hold on to the rope, following it as they walk. They should stop at each knot in the rope and use their senses to their fullest.

After everyone has gone through the trail, have children share the interesting things they sensed and how they felt without their eyes.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: 20

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Science, Language Arts

TITLE
Web of Life

OBJECTIVES
- To reinforce language development
- To visualize the interaction of the natural world

MATERIALS NEEDED
Ball of string, index cards, magic markers

REFERENCES
Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P20

Choose an environment that is familiar to the children. Have them develop a list of all objects in that environment. Make cards for each object which list the name and show a picture.

Example: SCHOOLYARD ENVIRONMENT:
Grass, soil, leaf, flower, bird, sun, rock, rain, worm, grasshopper, butterfly, etc.

Have the children sit in a circle on the floor. Pass out a card to each child and instruct everyone to hold the card in full view of the group. Give one child the ball of string and instruct him to pass the string to something in the circle that his object needs in order to survive or an object that needs him to survive.

Example: Mary-worm passes string to George-soil because the worm needs the soil to survive, or Mary-worm passes string to Nina-bird because the bird needs the worm to survive.

As the game continues, a complex web should develop.

Continue to play until every child is holding the string.

Now have one child tug the string/strings he is holding and have the children that felt the tug let the rest of the group know.

Discuss what happens to the web of life when one object is removed. Discuss how everything on earth is interrelated and that nothing can live independently. How do humans affect the web of life?

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P21

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Science, Math

TITLE
Food Chain Game

OBJECTIVES
- To reinforce color identification
- To introduce concept of "food chain" and interrelatedness of objects in the natural world

MATERIALS NEEDED
Colored paper squares, tape, popcorn

REFERENCES
Outdoor Biology Instructonal Strategies (O.B.I.S.), Delta Education, Box M, Nashua, New Hampshire 03601

ACTIVITY NUMBER: P21

This game is a variation of tag. Play it on a large flat field. Divide the children into two equal groups, assigning a color to represent each group. Tape a square piece of paper of corresponding color on each child's back. This will help to identify members of each group.

Introduce the term "food chain"--the transfer of food from plants to animals, or simply put, something gets eaten by something else which in turn gets eaten by something else.

In this game the food chain will be plants--insects--birds. Assign roles to each group. One group will be insects. The other group will be birds.

Explain food sources to children. The popcorn will serve as plant food for the insects. Only insects will eat plants. Insects should only collect popcorn, not eat it. Insects will be food for birds. To "eat" an insect, a bird must tag it. When tagged the insect should sit down.

Explain that once the game begins, insects should collect popcorn but try not to get tagged by birds. Birds should try to tag insects. Scatter the popcorn over a designated area. Set boundaries and time limit. Let the game begin.

After the time is up have the survivors group themselves according to color. Count the survivors.

Discuss what will happen to birds if all the insects are eaten. What animal will eat the birds? Did every bird tag an insect?

If the children's interest is high, here are some adaptions:

- Have the insect group be smaller than the bird group.

- Give insects a head start in collecting food.

- Provide home base (safety zones) for insects where they cannot be tagged. Trees make good safety zones.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P12

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Art, Science

TITLE

Nature Bracelets

OBJECTIVES

- To improve classification skills according to texture
- To discuss seed orgins

MATERIALS NEEDED

Wide masking tape, natural materials

REFERENCES

Murray State University, Center for Environmental Education Workshop

ACTIVITY NUMBER: P22

Make a masking tape bracelet for each child--sticky side out. Take children on a nature walk having them collect objects such as leaves, small stones, flowers and seeds that will stick on the bracelet.

Discuss the texture and source of the objects.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P23

TIME REQUIRED	LEVEL	SUBJECT
15 minutes	Preschool	Music, Science

TITLE

Clever Little Fox

OBJECTIVES

- To show that all living organisms interact among themselves and their environment
- To develop communication skills
- To introduce concepts of food chain

MATERIALS NEEDED

None

REFERENCES

Murray State University Environmental Education Workshop

ACTIVITY NUMBER: P23

The children use the tune of "Farmer in the Dell" while changing the words to show a food chain relationship. Give the students the words, one phrase at a time, explaining the term used. Form a circle with the first organism in the center. As each verse is sung, the organism chooses his subject to stand in the middle of the circle until the song is finished.

Example: 1) The clever little fox
The clever little fox
High-ho the dairy-o
The clever little fox

2) The fox takes the mouse

3) The mouse takes the seed

4) The seed takes the soil

5) The soil takes the stump

6) The stump takes the toadstool

7) The toadstool takes the slug

8) The slug takes the bug

9) The bug takes the bird

10) The bird takes the worm

11) The worm takes the soil

12) The soil takes the plant

13) The plant takes the sun

14) The sun stands alone

Compare several food chains.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P24

TIME REQUIRED	LEVEL	SUBJECT
15 minutes	Preschool	Physical Education, Science

TITLE
Nature Race

OBJECTIVES
- To increase observational skills
- To distinguish a variety of natural objects

MATERIALS NEEDED
A variety of natural objects, one each. (i.e., rock, feather, pine cone, leaf) or pictures of natural objects.

REFERENCES
Land Between The Lakes Environmental Education Resource File.

ACTIVITY NUMBER: P24

Divide class into two equal teams which are placed on opposite sides of a selected outdoor area. Number the members of each team, starting with number one on each team.

On the ground halfway between the two teams, place the collection of natural objects. Call a number and the name of one of the natural objects displayed in the center. The child with that number on each team runs to the center, selects what he thinks is the correct object and runs with it to the teacher. If the identification is not correct, call another number.

To prevent arguments, the first person to touch an object with the intent to pick it up is the one who brings it to the leader. No grabbing or tearing of objects is permitted.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: P25

TIME REQUIRED	LEVEL	SUBJECT
30 minutes	Preschool	Art, Science

TITLE
Pine Cone Bird Feeders

OBJECTIVES
- To teach children that they can help birds by feeding them in winter
- To distinguish the different types of birds that use the feeders

MATERIALS NEEDED
Pine cones, yarn, scissors, newspaper, paper plates, peanut butter, oatmeal

REFERENCES
Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P25

Have each child gather his own pine cone. Tie a piece of yarn on the small end of each pine cone.

Cover the work table with newspaper. Give each child a paper plate. Put one scoop of peanut butter and a scoop of oatmeal on each plate.

Have the children stuff peanut butter into the openings of the pine cones. Then have them roll the cone in oatmeal.

Hang the pine cone bird feeders on a tree branch near the classroom window. Learn which birds come to feed.

Birds can become dependent on feeders, especially in winter when other foods are scarce. Therefore, do not start a feeding program when natural foods are scarce unless you can continue the program.

PROCEDURE

ENVIRONMENTAL EDUCATION ACTIVITY NUMBER: 126

TIME REQUIRED	LEVEL	SUBJECT
1½ hours	Preschool	Science, Math, Art

TITLE
Fossils

OBJECTIVES
- To realize that a plant or animal may form an imprint in rock
- To become aware of one way that fossils are formed
- To improve measuring skills

MATERIALS NEEDED
Examples of fossils, natural objects, plaster of Paris, water, #10 cans, spoons, Vaseline, shoe box

REFERENCES
Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P26

Introduction: Prints of animals, shells, and plants that lived on earth millions of years before people did can be found pressed between layers of rocks. These rocks are called fossils. Show children examples of fossils and discuss their original forms. Have children make their own "fossils" using these directions.

1) Collect natural objects--(i.e., leaf, flowers).

2) Mix plaster of Paris with water until thick and creamy. Pour in shoe box to form a one-inch layer.

3) Put a thick coating of Vaseline on one side of object, place it on plaster and press firmly. Let harden twenty minutes or longer.

4) Put a thick coating of Vaseline on top of object (especially around edges) and over the hardened layer of plaster.

5) Spread a new mixture of plaster over objects until covered. Let harden until it dries thoroughly.

6) Separate layers by inserting hammer or knife where layers meet. Remove objects. Fossil imprints will be formed.

PROCEDURE

ENVIRONMENTAL EDUCATION

ACTIVITY NUMBER: P27

TIME REQUIRED	LEVEL	SUBJECT
1 hour	Preschool	Art, Science

TITLE

Papermaking

OBJECTIVES

- To discuss importance of recycling
- To illustrate ways to recycle paper
- To make creative greeting cards, stationery, and booklet covers

MATERIALS NEEDED

Blender, iron, newspaper, dishpans, screen frame, deckle box, cotton cloth, kitchen towels, knife

REFERENCES

Land Between The Lakes Environmental Education Resource File

ACTIVITY NUMBER: P27

1) Using screen and wood lattice, make a frame for straining paper pulp. Also make a wooden deckle box which will fit snugly into the screen frame. The deckle box will keep paper a uniform size.

2) Tear newspaper into tiny pieces to make paper pulp.

3) Fill blender three-fourths full of water. Add newspaper pieces (about one-half page) and blend until paper has become a pulp.

4) Fill tubs or dishpans one-half full of water. Pans should be large enough to hold screens. One person should put screen and deckle box together and submerge halfway in the water. Another person should pour mixture from blender into deckle box. Stir gently to mix water with pulp.

5) Lift deckle box and screen straight up out of the water so the water will drain through the screen and pulp will remain on top. After water drains, remove deckle box.

6) Cover pulp with cotton cloth to absorb moisture. Blot excess moisture with kitchen towels.

7) Carefully lift moist paper and cotton cloth from screen. Start edges with a knife. Place on table, pulp side up, and put another cotton cloth on top.

8) Iron until completely dry. Peel dried paper off cloth.

9) By placing different herbs, berries, and other natural materials in the blender with the pieces of paper, different consistencies and textures of paper can be made. Construction paper may be used in place of newspaper. Blending adjacent primary colors of construction paper will result in new secondary colors.

PROCEDURE

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